





# **IMMORTAL WINGS**

*by*

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*"Vagabond," "Caravan for China," etc.*

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## PREFACE

FOR years, we have read of and experienced murderous bombing raids. Man's conquest of the air has been employed for man's destruction.

In this book, a leading Air Correspondent recounts incidents, mostly suppressed at the time for security reasons, showing how men have used wings to defeat the Angel of Death.

East and West, North and South, Britishers, Americans and coloured men have worked and flown, with supreme courage and self-sacrifice, to save others.

Stephens, who crossed and re-crossed soaring mountain peaks, his heart badly diseased, his aircraft a crazy patch-work. Bill Bradford's men, who flew at night for medical supplies into enemy territory, without landing lights. Harry Hayes, who had never piloted a machine before, and took up a broken 22-ton bomber loaded with women and children.

These are examples of these stories of deathless deeds performed by men whose names should never be forgotten.

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*We Will Remember Them !*

## THE DAY OF THE FLYING GHOSTS

"In Victory, it is so easy to forget."

WHEN the drums beat and troops swing jauntily past in a triumphal march, there is but a little time to go before even the bemedalled hero becomes the Club bore. And, in this story, my hero has no medals, and not even a pretty uniform. He was just a civilian, not very young, who suddenly found himself "In the lost battle, borne down by the flying. . . . "

At such a time, the naked stuff of a man's soul shows clear.

Flushed and barbarous Japanese troops, red-handed from victory and debauch, had been crammed into transports and shipped down to New Guinea. Only a very little ahead of their coming, the news flashed through to the white settlements on the island that they were on their way.

New Guinea is not a civilized place, with ordinary means of transport. There are no railways inland, and no roads. Because gold occurs there, men and women have gone by air, cleared stretches of jungle, and established communities whose only way to the outside world is by flying.

Think what it would mean to white people to be caught by victory-drunk yellow soldiers in those places, from which there would then be no escape, and where the invaders would know that no whisper of their doings would ever emerge to civilization !

The aircraft in New Guinea at that time consisted mainly of patched-up old buses used for transporting provisions and machinery from goldfield to goldfield.

They were not luxury liners for passengers, and most of them would have instantly have been turned down as unairworthy for such a task.

But consider this !

In eight days, two old aeroplanes evacuated seven hundred and sixty-nine women and children, and a few injured men, from New Guinea to the Australian mainland. One machine carried an average of thirty passengers on each trip. On one flight, that aircraft took fifty-three people. One of the pilots who helped had retired some years before, on medical orders.

These flights were made during and after heavy Japanese air raids, and on more than one occasion, aeroplanes which left Port Moresby on return trips had to take off at the climax of an enemy raid.

It is of one of the pilots who helped to carry out this feat of almost unexampled courage and endurance that I want to tell you.

Salute L. J. Stephens, Wau gold man, heart patient, airman of the Old School !

Stephens was in Wau when the first Mitsubishi bombers passed droning overhead. Instantly, the place jumped into a state of emergency. The news spread that official warning had been received that Japanese occupying forces were on the way, and that evacuation to Port Moresby was advisable.

Useful official word ! It might be advisable, but how ?

Stephens had given up active flying some time earlier. He was not a young man, and at 6,000 feet his heart gave out on him, and he fainted with pain. A man so handicapped, of course, could not fly. But they say he used to make excuses to go aboard the ancient gold-bus aeroplanes, talk to the pilots, and taste again the poignant memories of the air. Once or twice, he said to his friends,

half joking, that he felt tempted to take up a machine right up to ceiling, and see what happened. Life without wings for him was pretty grim.

When the news came to Wau, Stephens went straight down to the airfield.

" You'll need pilots here," he said briefly. " Count me in."

The time was too urgent to argue.

There was an old Gannet machine there, grounded for repairs ; one of those aircraft which no one expected would ever fly again.

Stephens went to have a look at it. With him went another ex-pilot, Norman Wilde, who had been gold-mining for some time. Wilde did not care to tackle the task of getting this overloaded flying antique off the ground ; but Stephens wanted his help for a special reason.

They ripped everything out of that Gannet except a few vital instruments. They patched and tinkered and tested. They filled the rusty tanks, and made contact.

The antiquated aircraft spluttered uncertainly into new life.

Amidst the jests that Britishers can never refrain from uttering, even with the Japanese angels of death passing overhead, often low enough to send down spluttering gunfire as they went, that awful old machine trundled out on to the airfield.

" Resurrectionists ! " a gold-digger yelled at them, his teeth flashing in his black beard.

Stephens and Wilde marshalled women and children for passengers. There is such a thing as a centre of gravity on aircraft ; trimming is supposed to be done with the greatest care. But there was no time for that.

At last, loaded like a sardine-tin, the Gannet moved along the runway. Onlookers held their breath as the machine gathered speed.

It became airborne, but so late that it missed a fence by some inches and the grace of God, and flew for ten miles with its wheels brushing the treetops. Then it climbed.

It had to climb. It had to pass over the unexplored Owen Stanley Mountains, where the New Guinea cannibals live ; and those steaming, flaunting, forest-clad peaks rise to a height which obliged the Gannet to fly at more than 12,000 feet to cross them.

The machine's estimated "safe" ceiling, with its worn motor and tremendous overload, was about 8,000 feet. Stephens knew this perfectly well. But the need was very desperate.

A crash in those trackless, tropical mountains would have meant certain death. But clean death ; whereas, behind them, when the Japanese soldiery poured into Wau. . . .

Stephens knew something else.

" You'll have to take her over for a little, Norman," he said presently to his co-pilot, as he stared at the inaccurate needle of the altimeter.

" Right ! I know, old man. Lean back and take it easy."

Wilde and Stephens both knew that the latter's heart would not stand an altitude of more than about 5,000 feet. To rise to more than twice that, in his state of health, would most possibly be fatal.

Wilde could not get that overweighted aircraft off the ground ; but once it was flying he could handle it and, if need arose, could probably land it at Port Moresby.

So Stephens, in order to save at least one more load of women and children, had set out on that flight, knowing perfectly well that he would be likely to die in his seat before it was over.

As they flew on, he suddenly slumped sideways in a dead faint, caused by the stabbing agony of a heart that could not pump fast enough to compensate for the rarefied air over the mountains.

The passengers behind were laughing and talking. They did not know. Wilde sat there at the controls, wondering whether his friend was dead. There was nothing he could do.

They flew steadily on, rising all the time. Below were the wild and jagged peaks, bearded with tropical forest. The aircraft began to grow sloppy on the controls. It seemed that she just would not rise another foot.

The highest peaks were still ahead. Wilde kept her nose up. After all, they had to get through. They could not land there.

But Digger aeroplanes are apparently like Digger hearts—they won’t break.

Presently, the old machine was going down the other side. Wilde spared a hand to wipe the sweat off his face.

Some time later Stephens stirred, sighed, and pulled himself upright. His face was very white and drawn.

“I can take her—now,” he said briefly.

And he did.

When the ground staff at Port Moresby saw the Gannet circling to land, the warning siren sounded and the fire engine and ambulance “blood waggon” came clanging out. They had heard from Wau how much she was carrying. They had never expected to see her arrive, and now she had come, they were perfectly certain that there would be a big smash when she touched down.

But Stephens brought her in, and she made a perfect three-point. . . .

Stephens and Wilde went back for more. And then for more.

Meanwhile, other Wau men were performing miracles.

Two miners flew a fifteen-year-old Gypsy Moth off the airfield. The little machine had been out of commission for over a year, and was highly dangerous. They flew it 800 miles to Queensland, without maps or instruments. The flight took them two weeks. Twelve times they made forced landings on the way.

A big Lockheed was flown off, loaded with women and children, in the height of a Japanese bombing and machine-gunning attack. It was chased in the air, but got away.

Stephens carried on. After several trips, the airport authorities at Port Moresby found time to look at his Gannet. And the howl that went up from them might have been heard down at Sydney!

The machine was condemned as unairworthy. Of course, Stephens knew that. No pilot would have taken up that machine time after time, without maintenance work, if the need had not been so grave.

Doctors and others pleaded with him to give up the run. He was now obviously very ill. He fainted on every trip, and sometimes between journeys. No damaged heart would stand such continued strain.

Stephens grinned, and pulled at his everlasting cigarette. He listened to the advice, and only once did he offer any sort of answer.

"There's still some women and kids over there waiting for the Lyb soldiers to arrive," he said.

When they told him his aircraft was unfit to use again, he did not argue. He was, in fact, a man of silent habits.

He mooched around the airfield, and found there the

"Faith in Australia." You would not, perhaps, remember the name. Yet it, too, made headlines in its time.

In 1933, "Faith in Australia," piloted by C. T. Ulm, made a record-breaking flight from the United Kingdom to Australia ; and it made another record to New Zealand in 1934.

Long before this war it had dropped out of regular use. But, when the trouble came in New Guinea, a pilot named Arthur Collins and a mechanic named Taylor worked all through a day and a blacked-out night to get it ready for another flight.

There was a Japanese raid there that day, but they did not stop work when the bombs came whining down. They did not stop for meals, but swallowed hunks of bread hastily while they worked. They did not stop at night, but worked on, holding a torch in one hand. There were more bombs that night.

They knew that it was a toss-up whether the resurrected machine would cross the Owen Stanley peaks. That had to be risked.

They loaded the machine with women and children. At the last minute Sir Walter McNicholl, the Administrator of New Guinea, was carried aboard, very ill, on a stretcher.

On the journey they lost their way. There are no "fixes" over that trackless jungle country. But Taylor picked up an instrument which was lying loose on the floor of the cabin, and held it out of the window of the aircraft, thus gaining vital figures which helped them to re-set their course.

When they landed at Port Moresby, Collins said : "You might bring me a brandy. I never expected to get here to drink one !"

And then the airport authorities declared that machine unairworthy, also ; and, in fact, Collins flew back to Port Moresby as one of Stephens' passengers, and picked up

an elderly Tiger Moth there, and did some more evacuation trips on that.

It was to the condemned "Faith in Australia" that Stephens went when they refused to let him fly his own machine any more. He found her in a shed not intended to house an aircraft; she was pushed into the background, a forgotten remnant of some former flying age that had been raised again for the one flight, and then sent back to obscurity.

It was dark when Stephens found her, and he looked her over, as he stood there, by the light of his pocket torch.

Perhaps there came from that once-graceful record-breaker an emanation of her old conscious glory—of that proud power and daring that was in her when Ulm sent her fame flashing across an adoring world. "Faith in Australia" was not the sort of machine to go quietly into forgetfulness.

Stephens, whistling softly, laid a hand on her propeller. Then he picked his way round and climbed in. He touched an instrument here and considered a lever there.

Then he went out, and began to collect some mechanics. After that he went along to the authorities, and told them he intended to put "Faith in Australia" in airworthy condition.

"That is impossible without replacements you can't get!" they warned him briefly.

He smiled, and went out.

They worked over that aircraft, doing things that seemed impossible. They got replacements no one knew how or where. Blacksmiths were persuaded into attempting and succeeding in astounding repairs. Instruments were raised from somewhere, and mounted in the aircraft.

If it had not been "Faith in Australia," the job would perhaps never have been finished. But there is a magic

n that name still, in many Australian hearts. Ulm, at any rate, is not forgotten.

Stephens was ready, presently, to demonstrate the paces of the machine in the air, so that no one could any longer refuse him the right to fly.

He got his certificate of airworthiness, and put it in his pocket. People begged him not to fly because of his heart, but he answered them only with his friendly, disarming smile, and some vague words about being all right again now.

Just as he was waving the chocks away from under the wheels, prior to his first flight to Wau in this latest resurrected machine, the sirens wailed.

"Carry on!" he yelled, and pointed.

Well, to leave the machine in which they had all come to take a queer pride standing out there on the runway, was to ask the raiders to destroy it. So they did as he said.

Some Mitsubishi bombers came roaring over, and the A.A. guns began to clatter and thump and bang. The sky filled with dirty cabbages of smoke; but the bombers made their run in and discharged their loads. As they did so, "Faith in Australia" thundered down the runway and became airborne.

They saw her, of course, and tried particularly hard to put her out of business. But Stephens bore a charmed life that day.

Bombs came screeching down just behind him, and where the wheels of his machine had passed, huge craters were made that would have wrecked him utterly had he been a few seconds later in making his take-off.

Several Mitsubishi's circled low, despite heavy anti-aircraft gunfire, and tried to machine-gun him as he rose. He took no evasive action—probably did not dare to in his patched-up and ancient civil machine.

They missed him.

He headed for Wau, and as he did so nine of the Japanese bombers detached themselves from formation and took up the chase.

Normally, Stephens would not have had a chance. But the weather was cloudy, and his aircraft took advantage of every bit of cover. The onlookers on the ground watched the black shapes of the Japanese machines playing a sort of infuriated hide-and-seek, losing distance as they went; and if deep curses could find their mark, those pursuers would have gone only a very little way.

The chase disappeared in the distance.

But presently, when they had all given up hope, "Faith in Australia" appeared again over Port Moresby, and asked—"May I land?"

Once more, when the load of passengers had been discharged, people tried to get Stephens to give up.

"Still a few more to fetch," he said. "She flies pretty well, doesn't she?" and he laid his hand on the aircraft affectionately.

Practically every other aircraft had by that time been withdrawn from inland New Guinea. But Stephens took off once more.

And there the story ends. . . .

He did not return. Perhaps he was shot down by one of the Japanese warplanes that frequented the clouds over New Guinea, watching for something to kill. Perhaps the old aircraft that had flown so very gallantly failed to go on performing the impossible. Perhaps Stephens' heart collapsed entirely.

He gave his life in the air, not to destroy, but to save the lives of others.

"Greater love hath no man than this . . . "

## BATAAN'S BAMBOO RACERS

THE smoke rising from Pearl Harbour, after the treacherous Japanese attack that brought America into the war, hid for a time a number of other "incidents."

One of these was the passage of a formation of Japanese reconnaissance aircraft over the Philippines before war was declared. They came in at high speed, took photographs, and flew away.

As they went they met an ancient amphibian, a civil machine, flying peacefully along. With a typical Jap spirit, they spitefully shot it down, and it sank in three fathoms of water.

General MacArthur, realizing that this meant war, gave prompt orders for everything that would fly to be put into battle order.

"Fish up that amphibian and repair it," he said. "We'll need everything we can pick up before these Lybs are put back where they belong."

The work was started.

Meanwhile, the Japanese dispatched an invasion armada to the Philippines. Savagely and doggedly the American and Filipino troops fought, amidst sweltering heat, living on turtles and fish, bombed night and day, ragged, sleepless, but defiant. They were forced back into the foxholes of Bataan.

Their few fighting aircraft were shot down. Shortly after the withdrawal to Bataan, the last was destroyed by a swarming fleet of yellow O fighters.

And then a tragedy came upon the defenders. About the middle of March, medical supplies of quinine and other vital drugs ran out. Malaria, dysentery, and other dreadful

spectres stalked through MacArthur's sweating and sleepless ranks, in those tropical jungle swamps.

These men, standing like the Greeks at Thermopylæ, winning precious days in which their nation could mobilize its strength, were faced with surrender, not because they were beaten but because fever shook them by the hand.

Colonel Kennard, of the U.S. Army Medical Corps, has stated that, in the ten days before Bataan fell, more than 80 per cent of the defenders were suffering from malaria or dysentery.

Fevered, shaking, sweating, with failing sight and trembling limbs, beneath a pitiless sun, they fought a yet more pitiless foe.

In one week, the number of sick men in two hospitals rose from 4,000 to 7,000. And those were bed cases only.

One morning, a party of Americans asked to see the sorely-beset Army doctors who were trying to heal men without drugs. The party was led by Major Bill Bradford.

"We want to fly you in some quinine and lashin's, Doc.", Bradford said. "We've found some old crates I guess'd do the job."

Colonel Kennard went to inspect the "crates."

Chief of them was the resurrected amphibian, rescued from beneath Manila Bay. It had been repaired with bits from a scrap dump.

There was also a single-motor civilian Beechcraft two-seater. There was a ten-year-old Bellanca airbus, which had been out of use for a year. There was another civilian machine, so old and so patched with new parts that the original make was not apparent.

Not one of them carried a gun, or would have dared to fire it if they had, for fear of the recoil sending the crazy old machine out of control. The fastest could reach

about 110 m.p.h.—about 170 m.p.h. slower than the Jap fighters, which now patrolled the Philippine air unopposed.

Powers of manœuvre they had none. Night-flying equipment they were as innocent of as if they had been house-sparrows.

They were patched with bamboo, wire, rope, sailcloth. There seemed more bamboo than anything else, but then that was a local product in good supply.

"We calc'late we can run through by moonlight, and get you quinine and stuff from yonder," Bradford drawled, gesturing largely towards the rumble of Japanese artillery fire, and beyond. "Them Japs is no-account birdmen anyhow. *They'd never know!*"

It was sticking out a mile that the four machines were unairworthy. At the same time, the need for the quinine was deadfully urgent.

That night, four men held electric torches in position beneath the hanging edge of tropical jungle. There was no flarepath, no racing glimlamps; only the cavernous mantle of black night, with four great mechanical bats passing across the silver streak on the horizon where the moon was rising.

American marines and Filipino engineers stared at each other as the sound of the motors died away. Round them was a turf clearing, hidden by woods—the only runway they could find, for the Japanese bombers had blasted all the proper airfields.

The moon rose in silver glory, plating bits of metal, and lighting a man's face here and there, and the nose and paws of Bradford's terrier, which lay confidently awaiting its master's return.

Everyone knew that those bamboo resurrections had not a chance in a hundred of returning. Even if they

were not attacked by warplanes, those cane-and-string marvels could hardly hope to reach an unoccupied bit of the islands, and then make night landings without lights in fields that they had not even been able to survey or examine beforehand.

Hours passed. Then the terrier got up and whined.

"By heck, I can hear Bill's motor!" a marine said softly.

"Yellowbelly bomber," suggested someone else.

"Oh, yeah? Ever heard a bomber stutter like that? Besides, look at that dawg!"

Like a huge owl the amphibian circled into the wind, its engine off, as its pilot peered down into the black pool of the clearing. The electric torches were switched on. A great shadow passed, and the amphibian the Japs couldn't sink touched softly down, and bumped to a standstill.

Deftly it was turned, and taxied under the trees out of the way. That landing would have done credit to a daytime pilot with a mile of tarmac for elbow-room.

Bradford climbed out, shaking hands with himself and grinning. His dog ran up with wagging tail.

"Got a load," he said. "An' the boys are comin' along behind with theirs."

One after another, the three remaining aircraft came in and landed by the light of those four hand-torches. One came down rather badly, though the pilot was not hurt.

There had been a brush with a solitary Japanese O fighter—a hundred miles an hour or more faster, far more manoeuvrable, well armed. It came confidently at the patched airbus, its guns blazing.

Then, another of the "bamboo racers" dived at it from above, so steeply that the pilot said later that he

thought he might pull the wings off, for patched flivvers are not meant for dive-bombing.

The Jap went round in a tight turn to avoid being rammed, and vamoosed. The American pilot had deliberately tried to ram, knowing that he must kill himself if he did so (for none of them had parachutes), but reckoning to save the other three machines.

They had made a landing in moonlight by the sandy edge of a creek near a small town far behind the Japanese lines. They had found the place without instruments, in the dark.

They had found hiding-places for their machines as best they could on that uneven ground, with nothing but the shadows of trees to cover them. Then they had gone cautiously into the town, contacted certain loyal Filipinos, met a local doctor, and arranged for a swift hunt through the town for quinine and other vital drugs.

Chemists' shops, doctors' surgeries, private medicine cupboards—all had been enthusiastically stripped of their contents, and the owners had loaded them on the American pilots, with good wishes and kindly offers of help. They had pressed fruit and dainties and good-luck tokens into the pilots' hands, and smitten them on the back till their shoulders were sore.

Then they had volunteered to gather more necessaries secretly from far and wide next day, ready to load up the aircraft again if they could make a further trip next night.

A Japanese military post less than two miles away remained in blissful ignorance of all this activity going on a hundred miles behind the fighting lines.

Arrangements were made to signal the aircraft on ensuing nights, and to show some primitive landing lights

at a place near which car-loads of drugs and other things could be collected.

As Bradford's amphibian took off, first of the machines to essay the return flight, a Mitsubishi night-bomber flew over and circled round it. Apparently it assumed that the stranger was a Jap transport machine, for it only took a cursory look, and then flew on its way.

The next night, the whole crazy fleet took off again by the light of those four torches. It was something near a miracle. Mechanics had sweated all day to repair the machine that had made a bad landing. The steamy heat of the place was such that one man suddenly started to run round and round in circles, yelling; but they got him down, soothed him, gave him some sort of draught, and after an hour or so he was back at work again.

The four machines landed in the moonlight, one after another. Dark mobs of people rushed at them, wrung the hands of the pilots, patted the machines. Another load of drugs and special foods was put aboard.

Bill Bradford's amphibian touched some treetops in taking off, and a section of the wing was torn away. But he got back and put her down safely; and the damage was repaired with what substitutes the mechanics could find.

Every night, moon or no moon, for three weeks, those crazy aircraft ran to their secret landing-ground and picked up quinine, castor oil, salines, laudanum, cocaine, and dainty foods for the wounded men.

Several times they had to run through foul weather. Once more they were attacked by Japanese warplanes, and managed to throw them off and escape without being followed. Some nights they could not see the ground, and had to make blind landings without instruments,

trusting to the pinpoint lights of torches held in men's hands on the ground.

Not one single night did they miss their trip ; and not one of them was shot down or crashed.

From jarring landings, shell and bullet holes, and other damage, they presently became so patched and propped that they were generally nicknamed the Bamboo Fleet.

Never have the means of healing been more desperately needed—or more desperately won.

But malaria and dysentery increased among the troops, despite all that the four aircraft could do. Those men were fed on twelve ounces of food per day—food such as civilians would not touch, in some cases. They were surrounded by diseases and unburied bodies, with sweltering tropical dampness all around, and sleep denied by Japanese bombers and infiltrating yellow patrols.

Forty per cent of the American front-line troops were on their backs, and another 40 per cent were dreadfully ill at their posts.

It became obvious that Bataan must fall. A new job emerged for the Bamboo Fleet. They had to ferry the sick men over to the island fortress of Corregidor.

One hundred and twenty nurses and a number of other medical personnel were flown over, as well as great numbers of wounded, vital documents, essential medical equipment, and the last of the medicines.

Bataan was stormed at last. But even now the Bamboo Racers were not out of the game.

From a rocky platform on the island, intrepid Bill Bradford flew across, night after night, to the mainland, now in complete Japanese control. There, from his secret landing-place, he continued to bring prophylactics,

quinine and other necessities that were still being secretly collected from over a very considerable distance by the loyal Filipinos, under the yellow noses of the invaders.

That these flights were continued, without a single loss, despite the complete control of the skies by the Japanese airmen, is just one of those things that actually happened to defy the improbable and the impossible.

Some providence greater than human flying skill must have guided those crazy, bamboo-patched aeroplanes through the dark. The Filipinos said they were bewitched, and were invulnerable to harm.

Who knows ?

Perhaps the prayers of thousands of fevered men, given a fresh chance of life by those night flights, cast an invisible mantle round them as they flew, not in the savage glory of a mid-air fight or in the fierce anger of a bombing attack, but on an errand of mercy.

I wonder whether, when Corregidor fell, the Japanese troops scornfully fingered those patched wings and torn fuselages, thinking them not worth while to take away, even for scrap ?

I hope so.

I hope that, when this war is over, those four machines will be searched for and found, and carried reverently away to some great American museum, there to be set up as a record of something men did in the hour of overwhelming defeat, when courage runs at its lowest ebb.

For no less than Bleriot's cross-Channel "boxkite," those four antiquated aeroplanes wrote one of the deathless chapters in the world's flying history.

## LAST BUS FROM BANDOENG

EVEN to-day, people in Britain and America have only a vague conception of the position in the Far East when the Japanese inundation took place.

For years, white people out there had talked of the "Yellow Peril," and shaken their heads over it so long, that they came to look upon it as many churchgoers look on the Last Day—something that won't happen in their lifetime.

Even after Pearl Harbour, rubber planters down in Malaya and Burma lay back in their long cane chairs, sipped drinks, watched the chequered sunlight, and said : "That's been exaggerated. You can't do that to a great modern naval power."

When the inadequate vanguard of British tanks rumbled along the plantation paths, and perspiring officers talked of cutting down young rubber trees to make barriers, and burning off areas to open fields of artillery fire, the planters sprang up cursing, and pointed out that they were responsible to investors back home, and that nothing of the sort must be done.

No one really believed that there were tens of thousands of little yellow soldiers pouring through the jungles southwards, already beginning to menace Singapore. No one supposed that Singapore, which had used 20 per cent of the gross revenue of the island for many years to increase its fortifications, was likely to fall at the first knock.

But Singapore fell, and the Japanese flood rolled over Java, and powerful British warships were sunk offshore, and Mitsubishi bombers designed under British licences filled the skies unchecked.

As the yellow tide advanced, white refugees fled pitifully before it, and savage British and Dutch rearguards tried to hold it back.

From Bandoeng, capital of Java, American Flying Fortress and B.18 bombers flew an incredible number of sorties, to delay the victorious Japanese advance. Haggard men who had not slept for seventy hours went up again and again, with swarming enemy fighters attacking them from take-off to touch-down, and not one bit of fighter cover of their own.

With their big half-inch machine-guns, they took bitter toll of their pursuers; but their own numbers grew less and less.

Presently, on the battered and cratered Bandoeng airport, there lay four bomber wrecks, a B.18 and three Fortresses. They had been left behind as unflyable. Everything else had gone.

Bandoeng was burning sullenly. The airport buildings were just a mass of smoking wreckage and twisted girders. Unburied bodies lay in queer attitudes about the runways. Women and children who had left shattered homes still hid about the airport, hoping and praying desperately that some stray aircraft might put down there and take them away before the yellow invaders, drunk with victory, came swarming in.

Out of the Javanese jungle came two figures that no one would have recognized for United States Army Air Force men.

Dirty, unshaken, smoked from a score of bloody skirmishes, their uniforms in rags, they walked on to the deserted airfield. They were Captain Gerald Cherymisin and Master Sergeant Harry Hayes.

Neither of them had ever flown before, though Hayes was an expert mechanic and had done ground-work on Fortresses in the past.

They walked over to the wreck of the B.18. No experienced pilot would have wasted his time on her;

yet she was the least battered of the broken aircraft there.

After spending more than an hour going patiently over the machine, the two Americans went recruiting. They talked to Malays, Javanese, Britishers, old women, young girls, men, children.

Finally, with the queerest labour gang ever seen trailing at their heels, they marched back on to the cratered airfield and started work.

For two days and nights, while enemy artillery on the horizon growled and shuddered and flickered, those people slaved over that B.18. And then, when it was nearly ready for the air, there came the familiar sound of bomber engines overhead.

There had been many flights of Mitsubishiis over the place, and no one stopped work, even when bombs fell in the vicinity. This time, however, they meant business. They came swooping down very low, so that the airmen's yellow faces could be seen staring down.

The workers took cover as best they could. The bombers returned, very low, and dropped three bombs. One of them hit the repaired B.18 fairly, and simply blew it to bits. The other two fell ahead of it on the runway, leaving big holes.

After the bombers had gone, Hayes and Cherymisin gathered their workpeople together and explained briefly that the next attempt would be on one of the crashed Fortresses. No dirty Yellowbellies, they said, were going to stop them taking a cargo of passengers to safety.

A huge heap of spares was collected from the two Fortresses that were beyond all hope. The remains of those machines were then burned, so that they should not fall into Japanese hands later.

Fires were lighted from wood smashed from the sheds, and an amateur forge set up for welding. Incredible

things were done. Little children worked all night. Young girls burned their hands holding almost red-hot metal in place.

Hollow-eyed, unshaven, the two young Americans directed the work. They did not sleep for fifty hours, and then only got a snatch of an hour or two, in their clothes.

At one juncture Hayes went striding into the Bandoeng railway shops, which were on fire from bombing, and there gathered up a lot of bits of metal, got some welding done, picked up fragments from all over the place, and took them back to his patchwork bomber that Death himself might have feared to fly.

While they were testing a motor that afternoon more bombers came droning overhead. Hayes straightened his back, a big wrench in his hand, and raved. From want of sleep and food, he was more or less delirious.

The bombers flew on, and from them dropped dozens of black spots that almost instantly showed themselves as parachutists, each swinging on his Japanese paper parachute.

They drifted through the sky like pretty petals from a giant flower, some red, some blue, most of them white. The majority floated over the airfield and landed somewhere in Bandoeng city,

But about a dozen, swinging violently to follow an officer on a red parachute who had seen the Fortress standing out there in the open, cleverly directed themselves to the edge of the airfield.

Cherymisin, sitting in the Fortress, swung one of its big machine-guns that way. A blast of fire fled across the field, and half the Japs fell writhing on the ground.

The rest ran in a swift arc out of the field of fire, and came pounding towards the aircraft.

Then Hayes and three or four bearded Dutchmen pelted out to meet them. Shots crackled ; bullets sang.

Hayes was first among the Japanese soldiers. He swung his big wrench as they turned at him like a group of ferocious monkeys. Amidst the rattle of revolvers, there were softer cracks like eggs smashing. But they were not eggs ; they were skulls.

Presently, some parachutes were dragging aimlessly here and there, and Hayes and some Dutchmen were walking slowly back to the aeroplane. Some of them bound wounds as they went. Hayes swung a wrench that dripped and dripped . . .

His only concern was to have the bodies pulled out of the runway path.

Work went on again, and girls with blistered hands started once more filling in bomb craters and wrestling to drag broken girders aside.

Once more Hayes went into Bandoeng, part of which was not held by Japanese parachutists. He collected some queer items.

A schoolchild's compass. Some motor-car instruments. A gramophone and some records. A school atlas.

He returned to the airfield, and while he fitted some of the instruments in the bomber, the gramophone ground out ceaselessly a tune new to Java : "We'll hang up the washing on the Siegfried Line . . .," played by a Dutch orchestra, sung by a famous Dutch tenor, and recorded before Holland was invaded.

The music kept the children from hearing the worst of the bombardment of Bandoeng, into which Japanese tanks and infantry were cautiously advancing, scythed down by the machine-guns of savage Dutchmen behind smashed hedges.

At last the Fortress was ready for a trial.

Hayes and Cherymisin got in, and started up the power. Two of the four motors refused to budge.

Recall, these men were not pilots. They knew a lot about the mechanism of a Fortress, but neither had handled the hundred-odd dials, lights, switches and levers which control these twenty-two ton 300 m.p.h. monsters.

They got out, climbed along the wing, and worked over the dud engines all through that night, while the noise from the stormed city came much nearer.

At the crack of dawn, the final Japanese assault on Bandoeng commenced. The Dutch troops had already retired into the hills, leaving behind only a few death-or-glory men to delay the invaders.

As the artillery rolled like thunder, and formations of Japanese aircraft hummed overhead, while the sky was beginning to stain with the faintest light and the earth seemed blacker than midnight, the Fortress motors started up properly at last.

There were eighteen refugees aboard, including some injured men, ten women, and a crowd of children crammed into the bomb-racks.

It was deadly dark on that cratered aerodrome, and any display of lights would certainly have brought down a rain of bombs from the enemy machines passing steadily over to join in the destruction of the city.

So a Javanese volunteered to stand at the end of the runway with a lighted lantern, shaded over the top.

Think of it, you who read sitting in an armchair ; this man, whose name is not known, offered to stand there with twenty-two tons of flying metal racing straight at him. He was ready to take a hundred-to-one chance of being cut down so as to give those refugees a chance that

he refused himself, of escape from the oncoming Japanese tide.

He, like the pilots, knew that the runway was too short for the Fortress's take-off run, because craters at the end were too huge to fill up in the time that was available.

He knew, as they did, that the Fortress was still a wreck. She had no flaps, no radio, no airspeed indicator, no oil or gas pressure gauges, no charts.

Hayes pushed the engine revs. up to 2,700, 200 above the absolute maximum for safety, and jammed the manifold pressure past the red line at 46 and on to 50. Only so could he hope to lift the huge aircraft off the shortened runway before she went tail-over-nose in a crater.

The Fortress, damaged and patched, became airborne in 2,600 feet, an incredible run which experienced pilots can hardly believe.

No one knows whether the Javanese was killed by the bomber as it rose. Without him, it could never have got off the earth.

No glim-lamps, no flares, no leading-lights ; just a native with a lantern ready to give his life for others.

Bandoeng was burning under them in the dawn as they went over. Japanese aircraft, seen here and there, made no effort to interfere ; certainly took them for one of the Mikado's air fleet.

Those two young Americans, who had never flown an aeroplane in their lives before, accomplished a 1,300 mile flight with a heavily loaded aircraft, patched with unbelievable things ; without instruments or charts, using only a school atlas, they found Australia ; and without flaps, they put the twenty-tonner neatly down.

They say the "pilots" slept for nearly fifty hours after landing—and then got up and ate huge meals, and demanded to be put on the next job.

## WASP IN THE WEB OF DEATH

THE story begins in the dark days of Autumn, 1939. The platforms of all our great stations up and down the country were crawling with myriads of children fleeing before Hitler's threats, and with khaki thousands proceeding to mobilization points. Meanwhile, railway authorities were somersaulting their time tables by official direction, so as to receive the bulk of supplies on the western instead of the eastern seaboard.

Over the cities of Britain, sinister silver shapes were appearing as balloon barrages ascended into place.

But balloon cables had never been tested against modern aircraft. It was well-known that the Luftwaffe had carried out extensive experiments with cutters and fenders fitted to their bombers, so as to shear through or push aside the cables that we hoped might keep them from low-level precision bombing, and from machine-gunning civilians up and down the streets, as they had done at Guernica in cold blood, as a try-out for the British war.

Over here, mathematicians and metallurgists had calculated and reckoned, but their theories still had to be put into practice.

Any night there might come a thousand huge shapes through the darkness, looking to discharge explosive and fire on the heads of those who cowered below. Could they cut the cables?

We didn't know. We had to know. Someone had to fly deliberately into those cables, and find out. Find out—or die.

There was no lack of volunteers for this job, in which any man who went up had a one-in-a-hundred chance of getting down safely. No! the difficulty was to select

from those who offered to go. This man with death became the privilege of a few.

Among the first of them was Arthur Edmond Clouston. You remember Clouston? The man who, with Victor Ricketts, flew 26,640 miles from England to New Zealand and back again in ten days, twenty-one hours, twenty-two minutes. A flight equal to encircling the globe in ten days.

When you consider that that was done in a little Comet with two 224 h.p. motors, it makes post-war flying appear to have some possibilities, doesn't it? But that is another story.

They fixed up a loose cable, hanging from a tethered balloon, for the first tests. There were technical reasons against using a normal cable attached at both ends.

To appreciate what these tests were like, you should realize that a balloon cable is of heavy steel, and weighs well over a ton. To hit the cable in mid-air is similar to hitting a heavy iron rod.

Clouston was to use a machine with a wooden wing. They stood round the aircraft in the sunlight, watching while the last preparations were made. Discreetly in the background was the ambulance "blood waggon."

Presently, Clouston waved his hand, men pulled the chocks out from under the wheels, and the machine began to move forward. Far away, the balloon hung in the sky with the single thread pendant from it.

Behind Clouston's aircraft, another one took off. It followed him as he circled swiftly upwards. It was there for a purpose.

Supposing "anything" happened, the men in the second machine could record, as far as could be seen, the cause of the fatality. Then the next pilot to try that experiment would have an added chance of getting down alive.

Clouston's aircraft rose to a fair height in the sunny dome of the morning, and then headed straight at the cable. No use hitting it at anything but high speed. There is a racing motoring maxim that, if you must crash, crash at top lick and then you have a sporting chance of being thrown clear. The same applied to this test.

With the motor roaring, the aircraft hit the cable, which thrummed like a huge banjo-string, caught the propeller, whipped round the fuselage as might the lash of a colossal knout, and then slid away in a rebound that carried it through a mile of singing air.

Clouston regained control of his damaged machine, and made an almost perfect landing.

Clearly, that cable was not heavy enough.

That is to say, not heavy enough to kill. It was heavy enough to have savaged the aircraft as if giant jaws had gripped and tried to crush it. It went within an ace of being dangerous enough to behead the pilot.

On his advice, they fitted a heavy steel mesh over the cockpit of the next machine which he used for a test. A whipping chain can do dreadful things. Parry Thomas, the racing motorist, was beheaded that way on Pendine Sands.

Clouston went up for a second test.

This time he wore a special kind of crash-helmet, rather like those used by racing motor-cyclists, but reinforced. Also, there was the steel mesh cover. The cable could have cut through the lot; but no doubt it gave a slight feeling of added confidence.

Valuable data were gained from the exhaustive notes he made of his impressions of the first trial. For that was essential; his job was not merely to fly headlong into a killer-cable, but to record with ice-cold precision exactly what happened to his machine and himself, and to advise

on ways in which the lethal powers of the cable might be increased.

It is not, of course, possible to increase the weight of the cable indefinitely, because that controls the height at which the balloon can operate.

In the second trial, he once again went straight into the cable—itself a most skilful piece of flying. This time, it took his aircraft near the root of the port wing.

The watchers, coming as close as they dared in the observation plane, saw smoke rising faintly from Clouston's aircraft as the cable whipped savagely. The nose went down and round, and it looked as if a fatal crash must result.

Somehow, out of that deadly confusion, the machine emerged, staggered round in a screaming circle, and then regained an even keel. Smoke was still trailing from the port wing, and the wing itself "looked pretty queer," according to the observer in the second aircraft.

They thought that Clouston took rather a time to make his approach and go in to land. They were a little apprehensive that he had been hurt in the smash with the cable.

When, later, they touched down, and got out to have a look at his machine, they stood there silently staring at it, and marvelling.

The port wing was sawn half through, and the edges of the cut were heavily blackened and charred.

"The cable swung her down and round ; I thought she was for it," Clouston said. "At the same time, the cable being drawn across the wing started cutting through it, and I could smell the burning caused by the friction of the cable running over the wood at high speed."

"How did you get down without pulling that wing off?" someone asked. "It looks as if the slightest bit of banking would snap it like a matchstick."

"Oh, that was all right," Clouston answered easily. "But those cables aren't good enough yet. We'll have to try again before we get something to suit Uncle."

"Uncle"—generic name for the Luftwaffe—did not know how hospitably his reception was being prepared!

The experiments went on. Clouston flew in more of them. So did other men.

He seemed to bear a charmed life. He survived.

By degrees, and with infinite care, the balloon cables were improved and perfected. Presently, when the bombers came, darkening the moon, they found that the devices they had fitted did not shear through the British cables. It was not easy for them, after all, to "Guernica" British women and children, or to deface the name of manhood by throwing down Death on defenceless people without any risk to themselves.

Many of them paid the price that Clouston had gambled with. Smoking, flaming, the tattered remnants of those night armadas smashed down on to British earth, or fled like whipped curs back to the land that had spewed them out.

They tried feverishly to match our improved cables with improved fenders—great, clumsy things running from wing-tips to nose, adding hugely to the weight of the Heinkels and Dorniers and Junkers, ruining their manœuvrability, reducing their range and bombload and speed.

But even these were an indifferent guard against the black strands of the webs of death. And, meanwhile,

British night-fighters took savage advantage of the increased sluggishness and slowness of their sneaking opponents, and went in and "mixed it" and slugged them with cannon shells and machine-gun streams, and shot them down and drove them off and chased them streaming out to sea again.

And Clouston ?

He had gone on to a new sort of experiment in the interception of those whose idea of warfare was to steal through the night clouds to a place where women and their babies slept, kill and terrorize them in monstrous ways, and then hare back home again with beating hearts and nervous laughter, boasting of what they had done.

Good luck to him !

## THE MEN WHO BEAT "THE SECRET WEAPON"

DURING October, 1939, Hitler began to boast that he had released "a secret weapon" against the British. No one in Britain took much notice of the threat, and there was no sign of any great change on any front. Only the authorities, and a few Naval and R.A.F. men, knew that the secret weapon had actually been employed against us.

This new peril was the magnetic mine, dropped from aircraft in the path of our ships. The aerial minelayers came over in the dark, gliding in perhaps from a considerable distance away ; they settled silently on the water like obscene birds, and left 1,500 lb. mines submerged invisibly in the fairway.

Sometimes these mines were dropped from low levels by the aid of small parachutes.

The detonator of a magnetic mine is worked by a very sensitive magnetic needle. As a ship passes over the mine, a permanent magnetic charge possessed by any metal hull makes the needle move; this movement closes an electric circuit and explodes the mine, probably sinking the ship.

While the Navy was collecting information about the first minelaying raid by aircraft, we had a slice of luck. Two of the mines "gave themselves up on the doorstep" of a military area at Shoeburyness. As the tide receded, they were revealed lying on the mudflats at 10 p.m.

The naval people arranged with a local photographer to take a flashlight photograph at once. Less than two hours later, a naval "suicide squad" arrived from Portsmouth. They waded into the mud, and with the aid of torches, they made paper rubbings of various parts, so that special non-magnetic tools could be manufactured to open up the mines and examine them. The mines were moored in place.

Of course, they might have exploded at any moment. That risk had to be taken.

Then the tide came in, and they had to be left for a while. Lieut.-Commander Ouvry volunteered for the highly dangerous task of stripping the mines, and began his work as soon as the sea receded again.

Near him stood three other men, to whom he called out each detail of the work as he proceeded. The arrangement was that, in the event of an "accident," the next investigator would know what to avoid.

The luck held! Almost the first part to be removed was a detonator. The mine was then held to be safe, so

the whole squad started working by the light of shaded lamps in the darkness.

Then someone said: "I've got another detonator, I think."

This proved to be the main detonator. In fact, until that moment, they had all been standing rubbing shoulders with death.

After four hours of intensely perilous work, the mine could safely be lifted. It was carried ashore, and put aboard a lorry, which took it to a place where it could adequately be analysed.

Incidentally, when this was done, parts were found stamped with a datemark early in 1938.

Ouvry received the D.S.O. for his work, and others who assisted him were also decorated.

So far, so good. The secrets of the secret weapon had been laid bare. But methods still had to be devised to parry its dangers.

The obvious thing that suggested itself was the process that later became known as "degaussing." This is done by suspending an electrically-charged cable round the ship just below deck level.

*Queen Elizabeth*, the lovely Cunarder, when she crossed to New York in March, 1940, was one of our first liners to be fitted with this device.

But degaussing Britain's mercantile marine was a job that would take a whole lot of time. Meanwhile, Luftwaffe aircraft were sneaking across every night and putting mines down by the hundred in every shipping track.

Many of the intruders were shot down. There is an amusing story told that some of them were not interfered with—by order! It was, you see, so much simpler for

coastal watchers to plot exactly where they came to lay their bombs, thinking themselves unseen ; then we could sweep everything up tidily in the morning, and Fritz was kept from creating mischief out of sight.

Fat Fritz would never think of that one !

Still, there were many large areas of unquiet sea where we knew—or guessed—that mines had been laid, or might have been laid. Shipping had to continue to pass through these places.

What was to be done ?

The solution created one of the most daredevil varieties of wartime flying on record. Briefly, it was this. A suitable aircraft was to be fitted with a live magnetic coil of very large size ; the pilot was then to dive over suspected water, when, if he went down low enough, the mine would explode.

The obvious inference that it would explode just under his tail, and might very well blow him and his machine to glory, was missed by no one. But the job needed doing. There was no lack of eager volunteers ; and the disappointed ones were those whose applications for the work were not successful.

A Wellington was fitted with a "halo" to try the idea out. This "halo" was no light affair. It ran from nose-tip to tail, and far outboard of the two motors. It was really a hoop-shaped casing holding a magnetic coil, to which current was to be supplied by means of a Ford V.8 auxiliary engine carried in the aircraft.

Flying with a halo may be all right for angels, but for aircraft pilots it is not merely suggestive—it is damned awkward. To trim the machine, to persuade her to bank and turn and dive and zoom and do her other tricks, the addition of a great hoop of steel sixty feet in diameter

was somewhat *de trop*. Rather like the man on the flying trapeze trying to jump with a child's iron hoop swinging at his belt.

It was especially difficult to take-off and land the aircraft thus decorated, and there were some startling moments when the first machines were put through their paces before interested and somewhat cynical officers.

However, it was just one of those things that had to be done. Moreover, it was obvious to all that the real fun would not begin till oversea operations commenced.

After a good deal of practice, it was found quite possible to make flights with the halo on, and to complete them and land without having to call out the "blood waggon."

Then came the first attempts actually to explode some captured magnetic mines.

Quite apart from the possibilities latent in the mines themselves, this job had other drawbacks. It needed most expert piloting to dive over the mines without making a hole in the sea. Moreover, the auxiliary engine used to supply current to the coil was found to emit violent and disgusting fumes, which drifted about inside the aircraft and were apt to make the pilot sick at critical moments.

No man likes to be sick just when he is diving an aeroplane at a mine that may quite possibly do enough damage without outside assistance.

However, the day came when the first pilot swept low over a rippling and sunny sea, and a volcanic explosion poured upwards into the skies behind him. The Wellington, which had gone low in the wholehearted R.A.F. desire to "mak' siccar," was seen to rock and stagger, but the pilot regained control and brought her in to a relatively perfect landing.

"We got chucked around a bit inside," he said, "but we made the big bang all right."

Actually, they were bruised and bleeding, and the Wellington itself looked definitely the worse for wear. But the most vital step had now been successfully taken.

Not that there was not still a great deal to do! For pilots put on the job had now to learn, not merely to explode a mine marked by a flag, but to float around over suspected water where no one knew just where the mines were, and operate there.

This was, of course, very much more difficult. Flying too high would mean leaving the live mines to be touched off by ships which naturally supposed the channel to have been cleared. That was obviously impossible. But flying too low meant a new aeroplane every time anyone passed right over a mine.

On the other hand, the water had to be cleared.

Well, it just developed into a rather nasty job. The crews of the Wellingtons had to count on being jolted and flung around sometimes—or even having their machine brought down. But there were always rescue boats standing by; and in the end there were amazingly few accidents.

Meanwhile, minesweepers were got on to the business, properly fitted so that the magnetic mines did not particularly worry them; and degaussing gear was rapidly fitted to merchant vessels.

And so, in course of time, and through the unhesitating gallantry and self-sacrifice of pilots and naval men, Hitler's boasted secret weapon became no more than just another nasty nuisance.

But was he deflated? Bless you, not he! He just found something else to beat his chest and shout about!

## THE IMPOSSIBLE FLIGHT

THERE are still air experts in Britain and America who say that this flight could not have been made—that there must be some mistake or exaggeration in the reports of it.

Yet it *was* made ; the details have now been checked, and the pilot responsible has been able to tell his own story : and some of the people he saved have added to it a good many items that Captain Sharp's matter-of-fact modesty somehow forgot.

Captain Charles Sharp was Chief Pilot and Operations Manager of China National Airways. There is no such Corporation now—it is just one of those fine modern concerns that the New China was developing when the Japanese came along and tried to smash everything.

It used to fly big Douglas air liners on regular passenger time tables round China. Handsome, gleaming things, those Douglas DC.3's, able to carry a maximum of twenty-one passengers at a speed and with a degree of comfort that compared very well with British pre-war air liners.

When the Japanese soldiery poured like a yellow flood into China, burning, raping and breaking, the China National Airways machines performed a number of miracles, evacuating women and children down to Burma.

It seemed to most people, then, that the Japs had a limit to the madness of their ambitions, and that they would hardly dare to challenge the interlocked might of Britain and America in the East. But the theory of "honourable suicide" prevailed ; unable to liquidate the "China incident," the Nipponese plunged into the chasm of total war.

They will hit the bottom, presently, and shatter Japanese imperialism there for fifty years. But, meanwhile, Burma that had seemed so safe was now invaded.

The Japanese armies poured down through Indo-China, mopped up Malaya and Singapore, and flooded over into Burma. British troops, for so long a synonym of invincibility in the East, retreated doggedly towards India.

Ahead of the Japanese, as always, ran rumours of their doings—bayoneting, burning, crucifying, torturing.

Once more, the fugitives picked up their pitiful remaining belongings and went trembling to seek help and escape. Women and children who had already fled thousands of miles sought to set out afresh—where they cared not so long as it was “away.”

Again, China National Airways machines performed miracles, winging their way to India with perilous over-loads. And presently, like the skipper on the deck of a sinking ship, only Captain Charles Sharp remained behind.

Once more, his vast-winged aircraft stood quivering with impatience on the tarmac that was pitted and heaped with bits of material and human debris that spoke of Japanese air raids. The smouldering and twisted ruin of another air liner still smoked on an edge of the field where a Mitsubishi bomber’s missile had caught it squarely. The pilot had burned with his machine.

The aeroplane that remained was the last one that would leave Burma before the invaders came. The military aircraft had already gone, burning behind them everything that might have served the Japanese. The place was scarred and smoking all around. Drifts of hot, heavy smoke constantly blew over the pitted airfield, obscuring it and making those who waited there cough and rub their eyes.

The airfield was too small for these big Douglas machines and now it was in chaos. Before the war, it would have been condemned as suicidal to try to take-off from there at all.

Already, the shudder of gunfire could be menacingly heard. At any moment, more Japanese bombers might fly over, perhaps with paratroops this time.

The problem over which Sharp frowned, oblivious of the smoke and noise of war, seemed insoluble.

His aircraft was built to carry—at capacity—twenty-one people. There were twenty-two children alone, waiting patiently at the edge of the airfield, some of them sitting on ruck-sacks that held their family's total possessions. About seventy other people clustered there, mostly women.

Sharp stared over at them. The men and women were silent—disaster had dogged them till they could think but dared not speak. The children, too, were unnaturally silent—frightened because their elders were frightened.

Sharp walked across the tarmac, skirting some bomb-holes and rubble. For no reason that anyone could see, he began to sort out the mob into groups—fat, medium, thin. His brain was doing swift and vital calculations with figures, as the distant gunfire throbbed on the hot air—figures on which the lives of those people depended.

He was working out the approximate weights of the passengers.

When you overload an aeroplane, you can't put people in like you put them in a crowded bus. For the aircraft has to be trimmed so that it maintains flying stability and keeps an even keel.

"Pull the arms and upholstery off those seats!" he commanded suddenly.

Men started to ask questions, but were silenced by Sharp's fierce, intent face. The inside of the luxury liner soon resembled a boy's dormitory after a pillow-fight, with rags and stuffing and dust everywhere, and splinters and twisted metal and ruins in that once perfect interior, where pretty air hostesses had walked.

Everything that could be torn or levered out was ruthlessly flung outside, by sweating men with knives and wrenches in their hands, on to a rubbish heap that grew every moment.

Sharp calculated its weight, and bit his lip.

"You!" he said, jerking a thumb to the women.  
"Get in."

There were twenty-one of them. Confusedly they got up, and hesitated, looking frightened.

"But—our children . . ." a mother began, gripping her little girl painfully, tears welling in her eyes.

"Do as you're told!" Sharp ordered.

They filed in, while the distant guns grumbled like animals being deprived of food. The women crammed one against another along bare seats whose arms and cushions had been torn out.

"Now you—you—you—you—you—you—you!"

Seven men, most of them wounded, followed the women into the seats. Sharp picked them carefully, each according to his estimated weight, so as to trim the ship. He looked them over, moved one and another to different places.

"Now then you kids!" he said.

His grim face relaxed into a half smile as the youngsters fled, like chicks beneath a mother hen, to the aching arms outstretched for them.

" You'll have to shuffle out a bit," he added. " That girl there further along. Right! Now, then, young shaver . . . move up to the end. Yes—and you. Ah! That looks more or less all right."

Fifty passengers already in the machine designed to carry at most twenty-one.

There were still some wounded men, quietly waiting to see the machine off. It was pretty apparent that their chance had gone. Some where white, some coloured.

Sharp pointed to four of them.

" In the lavatory," he said. " You'll have to crush a bit, I'm afraid."

They went obediently along the gangway and took their places.

" Some of you in the forward mail compartment. How many can cram in there? You—yes. You—you two. . . . "

They got six men into the mailbox " with a shoe-horn " as some of the passengers said afterwards.

" Now some along the central gangway, between the seats. Come along, you wounded fellows. Right—now you—and you. . . . "

Fourteen men were crammed along the gangway, tightly pressed to one another.

" Well, we can't fall, anyway," one muttered, grinning.

" So long as the ship keeps up!" whispered another.

Seventy-four passengers aboard.

Sharp walked round, admiring his handiwork. Those who were left behind began to melt away. They had to think how they could cross the mountains into India on foot.

" Sorry!" Sharp said. " She won't trim. You'll have to go for'ard. Change places with that fellow there. And you—yes, that's the idea."

The aeroplane spewed out people, and took them all in again in a different order. The guns on the horizon grumbled out loud. Far away in the east, some black dots went faintly humming through the blue sky, and faded—Japanese bombers on a mission.

At last, Sharp was satisfied.

He went forward and sat down in his place. He remained motionless there for a few seconds. Perhaps he prayed.

His hands began to flit over the controls. The passengers felt the quivering of the great machine increase, like a thing with a life and strength of its own, gathering its strength to soar yet fearful of the attempt.

They did not know what Sharp knew, that to get them off the ground at all, he would have to take risks with his motors that only a madman—or a man inspired—would dare to take.

They trusted that hard-faced pilot absolutely, never dreaming that he was trying to do a thing that the designer of the machine himself would have died rather than endorse.

The aircraft seemed to gather herself for the trial, and the motors roared to a tune they had never known. Still she did not move.

And then, at last, when the noise was screeching and intolerable, she started to bump forward, wobbled along, gathering speed at a terrifying pace. A huge black blot of a bomb-crater slid past like an inky splash beneath one wing, and the aircraft tilted as the wheels rode over some rubble at the edge.

Only Sharp knew that another foot of tilt would have dug a wing into the ground, torn it off, and sent the machine spinning round in a flaming circle of burning petrol and irretrievable ruin.

The end of the runway leapt at them, and the machine was not yet airborne. No chance to stop her now. . . .

Give her the gun, by God !

She ploughs on, gets her wheels off the ground, heads dead at some trees with her throttles wide, and no man on earth able to do any more.

Back on the airfield, spectators are screaming at the impending tragedy.

And then she is over, her wheels cutting away boughs from the treetops and spattering them far and wide as she ploughs on. She won't rise, but there is no other obstacle immediately in her path. She roars away out of sight, seeming to leap across the ground.

Sharp, at the controls, shakes the sweat out of his eyes, and licks his lower lip. It is bleeding freely where his teeth had gripped it.

Behind him, a child laughs with glee at the thought of being really and truly up in an aeroplane.

Seventy-four passengers instead of her maximum of twenty-one, and some of the worst flying country in the world to traverse before she can reach Indian soil. And then a landing to make, perhaps with the undercarriage damaged by the brush through those trees.

Will she do it ?

Will she be spotted by some patrolling Japanese war-plane, and fall like a partridge before a falcon ? Will bad weather develop ? Sharp knows that even high wind would be fatal. And this is a route notable for terrible storms.

Sharp got his machine safely to India, found an aerodrome, and brought her down to a perfect landing, after traversing some of the worst mountains in the world.

I can tell you the story, but I cannot tell you how he did what could not be done.

His courage and faith achieved the impossible.

## THEY FELL THREE AND A HALF MILES

THEY say that cats have nine lives. But I am going to tell you about a "cat" that used up the whole batch, and then came purring home, bringing its tail and not much else behind it, after a 3,500 mile non-stop run.

A great part of that flight was covered in a condition in which only superlative flying skill, great courage and endurance, and an element of luck prevented the giant aircraft from smashing nose-down into the waves.

A "Cat" is the R.A.F. name for the 104-feet wingspan Catalina PBY flying-boat.

She is one of the biggest aircraft in operational service, weighs more than fifteen tons, has her own electric kitchen and all mod. convs. (as the house agents used to say), and can cover a range of well over 4,000 miles.

A very fine machine, but rather a handful to toss around the sky when anything goes badly wrong upstairs over the middle of the Atlantic.

Six men climbed aboard her in Bermuda, and went to their stations ready to run her over the 3,500 mile course to Britain. The pilots were J. G. Fleming and J. J. Meikle; there were two flight engineers, and two Canadian civilian radio operators.

There was the usual good-natured chaff when they were ready to start. This business of flying the Atlantic, that used to be a newspaper headline story for the world before the war, has shrunk to be just a routine journey like any other. Day and night, big machines go droning eastward, no longer in ones and twos but in flights and squadrons, to join in the war. Hitler has learned and will learn how unwise it is to throw stones into hornets' nests.

"How many pairs of silk stockings for the girl friends?" came a strong American voice.

"I'll have you know," one of the crew shouted down, "I don't need any bribes to get along with the English girls."

Presently, the Catalina was circling into the wind, and the watchers down below saw her head towards Europe and dwindle to a dot, and vanish.

The men aboard settled comfortably for the twenty-four hour run. You don't see much on these trips—nothing except cloud, really, unless you are lucky. It is amusing how many hundreds of young air crews have flown the Atlantic now and never seen the Atlantic at all except when starting and touching down.

But this "Cat" was apparently not the black cat that carries good luck with it.

It apparently carried a Gremlin—R.A.F.'s language for a mysterious being who conks up the works at the worst of all possible moments.

At about 19,000 feet, high over an invisible ocean, amidst a loneliness that has to be experienced to be realized, the men gossiped as they hurtled along at about three miles a minute, remote from all human affairs.

The automatic pilot was in charge. "George" is a marvellous device of spinning gyros and polished levers, fed occasionally with a drop or two of fine oil, and quite capable of flying a fifteen-ton aircraft along for hundreds of miles by himself.

"George" is a reformed character nowadays; they have improved him so that, by actuating the flying control surfaces of the machine, he may prevent it from crashing if anything goes wrong, and can bring it back on to a level keel, pulling it out of a dive or rectifying any other violent manœuvre. This is going to save quite a lot of lives when it is fitted more generally on British aircraft.

But the new "George" is even now hardly out of the experimental stage. The old "George" of this Catalina

functioned only when she was flying on a straight and level course.

And suddenly, without warning, the Gremlin got "George" and wrung his neck . . . or something!

Things began to jam. The right aileron was full down, and this flung the aircraft into a spiral dive like a whirling comet.

The men inside were slung to and fro like dice in a box.

One of the engineers had been sitting sipping milk from a bottle on the table before him. As the Catalina dived away out of control, the bottle flew—upwards.

*Grabbing at the bottle, the engineer flew upwards also.*

He went slowly, ridiculously gripping at the bottle like a drowning man clutching at a straw, till his head hit the roof of the cabin with a good hard bang.

There he hung suspended, feet far off the floor, still gripping the bottle as if for dear life, his head against the roof, turning slowly as the machine spun round and round—"for all the world like a Reubens' cherub painted on the ceiling, except for his frightful language," as one of the crew said afterwards.

Meanwhile, the two pilots were wrenching at the controls without the slightest effect, and the grey and crawling floor of the Atlantic was bounding up towards them thousands of feet nearer with every breathless second. It was like a nightmare, or a distorted movie picture.

To hit the sea at that pace would smash them and the machine, and strew the bits over a square mile of tossing waves.

From 18,500 feet that fifteen-ton aircraft hurtled like a whirling rock down to less than 500 feet above the water. Yes—she fell downstairs three and a half miles!

Then, by the mercy of God, first one aileron and then the other tore completely away and vanished. The

ailerons are those big, hinged sections at the back of the wings.

The two pilots, dragging in desperation at the controls with every ounce of their strength, found the aircraft going suddenly back to an even keel.

The engineer who had been suspended helplessly against the ceiling came down with a thump, and found himself huddled on the floor still holding on to his bottle.

Meanwhile, all their lives hung by a thread far more slender than the trick of gravity that had held him up.

"Jettison—everything portable!" Fleming barked hoarsely over the intercom. "Look sharp!"

Any steamer that happened to be ploughing doggedly along over that part of the Atlantic then would have seen a surprising sight. For, from the huge Catalina, roaring along on ragged and broken wings barely above the wave-tops, poured out the oddest assortment of things.

Smoke-flares necessary to save their lives if they came down on the sea; a £50 toolkit, the beloved private property of one of the engineers; suitcases; bottles and plates and books; huge spare parts of the aircraft; personal belongings. . . .

It was a matter of life or death or lighten the ship quickly.

At the radio, one of the Canadian operators, bleeding from the cheek where something had struck him when he was flung about in the great dive, was tap-tap-tapping.

"Both ailerons gone . . . position so-and-so. . . . Attempting to proceed on course."

More than a thousand miles away in Britain, telephones began to ring imperatively, radios to chatter, uniformed figures to hurry to and fro. On the North Atlantic bomber ferry, since the first flight was made by Don Bennett and some others on Armistice Day, 1940, there

has been a loss of less than one-half per cent of the machines dispatched.

But it certainly looked as if this Catalina would be one of the casualties. Experienced men over here just did not think it possible that so big a machine could remain airborne for many minutes without proper lateral control.

"Signals" began to get busy trying to arrange to pick up the victims.

Aboard the Catalina, the fixed aerial had gone with the ailerons, and it was difficult work sending out messages on the trailing aerial. Moreover, for obvious reasons, radio silence is enjoined on these trips except in cases of special emergency.

"We've a pretty ropey chance of making it, boys," Fleming said, after a while. "But I vote we carry on. What do you think?"

The vote was carried without dissent.

Fleming and Meikle now had to do with their own hands and sinews what, in normal circumstances, the design of the aircraft would have done for them—hold her on a straight course. There was no alternative except death.

Without ailerons, this called for every atom of strength that each of these powerful young men possessed, and it had to be exerted all the time without flagging.

They dared not remove their hands even for a second to look at a chart, nor could they risk examining a chart held up by someone else, for any abating of their grip might have put the machine into a spin from which she would never recover.

Luckily, Fleming had memorized the course. With Meikle's aid, he brought the aircraft very gently round, keeping her on her true course.

And then there came Fate's final attempt to overthrow these daring young men who rode the skies despite everything that had happened to them. They flew into an Atlantic storm.

The winds in these storms sometimes raise waves that smash the lifeboats far up aboard a great Atlantic liner. It was through such winds that the two pilots had to force their broken machine.

Grimly they held on, losing count of time, each obstinately determined to complete the flight properly.

After what must have seemed an eternity, they approached the British coast. People ashore picked up the signal asking permission to land, and directed them where to arrive.

In the harbour where they were expected—if you can use that word when they were never expected to arrive at all—violent activity commenced. Launches were manned and stood ready; a tug with fire extinguishing gear fussed into sight; ashore, the ambulance “blood waggon” stood ready.

Far away, a dot appeared in the stormy sky. It grew large—huge, roaring out a song of triumph from its 1,200 h.p. motors that had outridden all the storm-gods of the Atlantic.

The motors' thunder ceased; the “Cat” with ten lives dropped gracefully towards the water—touched down amid a huge cloud of spray, taxied steadily on the waves . . . and stopped.

As a launch raced up, and the door in the huge aircraft's side opened, a ragged, spontaneous, yelling cheer rang across the harbour to greet the new arrivals, and then went echoing and re-echoing far away.

A flight probably never to be repeated in the history of the air had been completed in scheduled time.

## JUMP WITHOUT PARACHUTE

PARACHUTES are useful things. About 3,000 lives have been saved in the R.A.F. already by their use, and if we consider all the belligerents, the number of men saved must be somewhere between 12,000 and 20,000.

Now and again, people have queer adventures with them.

I remember talking to a fighter pilot who saw two such incidents within a few minutes. A Dornier 17 was shot up, and the rear gunner baled out, but the parachute caught on the tail of the machine. While the aircraft swooped and hurtled all over the sky, out of control, the man was whipped along behind it ; he was still there when it dived into the Thames.

Another Dornier in the same battle got shot up, and a gunner who tried to bale out got his parachute caught inside the machine, while he hung outside. Although the bomber was hurtling downwards, two other Germans were seen to run along and spend some time freeing the parachute before they jumped themselves, only barely in time before the machine nose-dived into the ground. They must have been decent folks.

Standford Tuck, the fighter ace, once jumped, in a fog, from about 400 feet up—and lived to tell the tale. Once, a Russian pilot jumped from 12,000 feet, after ramming a German machine—his parachute did not open, and he landed on a steep mountainside, cascaded down the frozen snow—and lived.

The jump I want to tell you about took place also without a parachute ; but from a very different height. It is, in its way, an epic story ; for it tells of split-second thinking, with a man's life in the balance ; of most

masterly piloting, and of rare courage which deliberately faced death to give a pal a chance.

Captain Sid Gerow, a test pilot of the R.A.F. Ferry Command, was trying out a Boston over the frozen Lake St. Louis, near Montreal.

Gerow is an American who joined the Command in May, 1941, from an Air Observers' School at Edmonton. He was formerly a pilot with United Air Lines, though he had learned to fly long before at Minneapolis. He had always been mad on flying, and was good at most of the high-speed sports—he could handle a racing car, liked speed-boats, and was an expert at ice-yachting.

In case you do not know it, ice-yachting is one of the fastest and most thrilling sports in the world. A sleigh equipped with big sails is used, looking quite like a racing yacht in rig. These ice-boats attain a terrific speed over frozen lakes, and need the most certain judgment.

Gerow had once a pretty startling adventure with an ice-boat. He was flung off at a turn while his "craft" was doing something over eighty miles an hour. He skated over the ice for nearly half a mile, and came to a stop not much the worse for the fall.

In testing the Boston above Lake St. Louis, he had with him Mr. H. H. Griffiths, a technical assistant and compass expert from Ferry Command.

They put the big aircraft through its paces, ran it up to maximum speed for the test, tried it at ceiling, and were very satisfied with it. Gerow made a few notes on his pad, but on the whole it was an excellent specimen.

They were batting along at several miles a minute, some 4,000 feet above the icy surface of the lake, when Gerow suddenly noticed a rush of freezing cold air. He called back to Griffiths, but received no reply. He called again—and there was still silence.

And then he heard, above the thunder of the big motors, a very faint and thin sound of shouting. The sound was so uncanny that he stared round for a moment under the impossible impression that someone must be yelling from another aeroplane.

Then he realized that Griffiths had fallen out of the machine, and was hanging outside somewhere.

What had happened was that the narrow emergency hatch in the floor of the front cockpit had not been properly fastened, and had suddenly sprung open under Griffiths' weight, projecting him out into space.

As he fell through, he managed to scrape with his fingers at the side of the exit, and get a despairing grip which temporarily held him there. The cold wind Gerow had noticed was the air entering through the open hatch.

Gerow realized that Griffiths could not hold on, against the several hundred miles an hour wind that poured up through the trap, for more than a few seconds. It was impossible for the pilot to leave the controls and climb down to help the hanging man; nor could he have held on long enough for that; and it was completely improbable that anyone would have had strength enough to drag him inboard against that wind.

It was then that a picture flashed through Gerow's mind of himself falling off the ice-yacht, and surviving. What he had done, another could do—if there was time to arrange it and if it could be managed without crashing the Boston. . . .

Even while the memory flared in his mind, Gerow was throttling back the motors. The aircraft rushed downwards towards the ice below, Griffiths still faintly shouting, still hopelessly hanging on.

It was a matter of the most intense calculation for the goggled pilot frowning at his instruments. Bostons are not built for dive-bombing with a human bomb !

Gerow stared intently ahead at the uprushing whiteness. Holding on till it seemed that all chance of saving the machine had gone, he suddenly pushed the throttles forward, just at the very second before the airscrews were going to hit the ice, and pulled the Boston sharply up.

As she roared away, the sudden climb shook Griffiths' clutching hands from their grip and hurled him forward and down. The machine was then travelling at about 125 m.p.h.

Griffiths went through the freezing air like some new sort of missle . . . hit the ice and went skidding at a terrific pace along it, presently collapsing flat and still sliding and slithering on and on and on. . . .

Overhead, the Boston was coming round in a tight turn, and Gerow was staring down, painfully anxious to see the result of his breathless experiment, yet afraid of what he might find there.

He saw the tiny figure below scramble to its feet, shake and beat itself, and then look up and wave.

Griffiths was pretty dazed, and he was suffering agonies in his hands, for when he fell through that hatch he had not been wearing gloves, and his hands, while they sustained the weight of his body in that icy gale, had become badly frostbitten.

He started to pick his way across the ice towards the distant shore of the lake. It must have been a nightmare journey for a man who had lived through the few minutes that had elapsed since he dropped through the hatch floor 4,000 feet above the ice.

Meanwhile, the Boston was going Hell-for-leather

towards home. Gerow landed, and telephones began to ring ; very soon, a rescue party was on its way to meet the man who had jumped without a parachute.

They took him to hospital, and when they looked him over they found that, apart from his frostbitten hands, he was suffering only from severe shock and some bruises. There was not one bone broken.

Bravo, Sid Gerow ! There is a man who, in a terrible emergency, knew exactly what to do, and had the great skill to be able to do it perfectly, to save life.

He is a pilot worth the name !

## TWO INTO ONE WILL GO !

THERE will be some exciting tales to be told, when the Germans have been kicked out of Africa, of air adventures over that unpleasantly hot and sprawling continent.

They will tell of R.A.F. armoured cars probing behind enemy lines to find sites for advanced airfields when our push came ; of miracles of "cannibalization" by which two smashed aircraft were made into one sound one in time for a special job ; of overheating oil, dust-worn bearings, and cockpit temperatures of over 100 degrees ; of 10,000 feet dust-devils, and the servicing of machines whose metal was almost red-hot in the sun.

The story will be told that lay behind Air-Marshal Coningham's order permitting flying men to wear leather walking boots, because twenty-five pilots in one week regained their bases after being shot down far behind the enemy lines. Flying-boots, of course, blister the feet after the first fifty miles of walking—as they say !

Then there will be a pretty creepy tale of some happenings at a bomber headquarters situated in a Roman

tomb, with coffin niches for bunks—very cool and pleasant, and envied throughout North Africa, until some of the Romans began to lodge objections without first filling up the requisite forms.

But this particular story concerns one of the very few occasions in this war when a fighter aircraft returned to base with a passenger jammed into the single-seat "tailored" cockpit on the pilot's knees.

Diredowa aerodrome was being fiercely attacked. It is no secret, now, to say that the troops engaged had been told that it just *had* to be taken; important affairs more than a thousand miles away depended mainly on the speed with which that job was completed.

The "softening-up" process was carried out by fighter-escorted bombers. They were opposed by Italian fighters, and by some of the heaviest concentrated flak seen up to that date.

Two men, flying Hurricanes, had orders to go in low and strafe the gunners. They were South Africans—Lieutenant Kershaw and Captain Frost, D.F.C. They and their squadron had been at work busily for some days, during which, as well as damage done to ground defences, they had shot down or destroyed on the ground ten Italian machines. The pilots of that squadron had hardly rested for three days and nights, and had flown a very great number of dangerous sorties.

On this occasion they flew in pretty low, hopping suddenly over a hilltop and going down in a shallow dive that must have looked to the Italian gunners below as if it would end by continuing right on down the gun-muzzles.

The Italians, who, at times, are not nearly such drooping macaronis as some people who sit at home in armchairs are apt to believe, hosepiped up everything they could throw except their iron rations.

One of the Hurricanes, as it pulled out of the dive after letting go everything it had at point-blank range on to the guns, staggered, did a sharp turn, and went down to land quite neatly with an appalling smack on the Italian airfield, just missing the burned-out ruins of a Fiat fighter that lay there.

"I jumped out," Captain Frost said later, "and I didn't have to set fire to the machine because she was going strong already from midships to tail. Then I saw another Hurricane coming round and back, slamming at the Italians and with every gun in the place letting off at him. He was going along in a little private Hell of shell-bursts all to himself.

"I never dreamed that he would try to land, and when he touched down I thought he must have been hit somewhere."

There were other witnesses of the second landing.

Jubilant Italian gunners, naturally supposing that they had bagged a brace, came swarming across the tarmac, yelling with joy and waving their arms, while the remainder of the attacking Hurricanes hummed away into the distance.

The Italians saw the second Hurricane turn suddenly on the ground, and taxi swiftly across to where the blazing wreck of Captain Frost's machine was still spouting fire and smoke. They saw the newcomer turn into the wind, and wait with its airscrew humming round.

Out of the cockpit leaned the slight figure of Lieutenant Kershaw—and waved.

The Italians saw Frost run like a hare towards the signaller, and clamber into—or rather on to—the Hurricane.

Then things woke up.

The Italians pulled revolvers and caught up rifles, and sent bullets singing into the Hurricane fuselage as the

machine began unsteadily to bump over the runway—unsteadily because the pilot, with his pal's body in front of him, could not see where he was going.

Frost, aided by an arm that gripped his middle like an iron clamp, sprawled over the top of the open single cockpit, and clung on with hands, feet and eyebrows.

A machine-gun at the edge of the field broke into an urgent chatter. The bullets kicked up little spits of dust to one side of the moving aircraft. They lifted, and began to puncture the fuselage and wing, leaving clean little drilled holes. They began to whine past the men aboard.

Suddenly, there was a terrific swing as the Hurricane edged a bomb-crater.

Frost, lying with his finger-nails scrabbling at the streamlined metal fuselage, jerked sideways—only missed being flung right off because the return of the machine to the runway tossed him back again.

As its wheels lifted from the earth, a knife flung by a crouching black legionary thrummed on to the aircraft within a foot of the passenger's cheek.

Some movement dislodged his hold, and his feet fell down into the pilot's lap, all among the vital controls that were taking the aircraft into the sky. Frost got a grip on Kershaw's shoulders, and hung on for very life.

From the airfield came the first irregular crackle of flak as the Italian gunners scrambled back to their weapons. Their intention was obvious; they were concentrating a curtain of fire right in the path of the rising Hurricane. In less time than it takes to tell, they had "boxed" it round, and the thuds, each of which made the machine lurch as if it had been hit by a giant fist, closed swiftly in.

The Hurricane tried to get away, but evasive action with two men in the cockpit was impossible. There did not seem to be a chance in a million of climbing through that sudden inferno of exploding shells.

And then there came one of those queer incidents which sometimes brighten for a moment the bloody smoke of war.

An Italian officer ran out of a defence position on the edge of the airfield and waved wildly to his gunners.

In a moment, the crackle of the barrage stopped.

As the Hurricane, with its double burden, circled up over his head, the Italian looked up and flung out his arm in the Roman salute.

Unchased by gunfire, the British machine flew off.

But its task was, as yet, only begun.

The two men jumbled up in the cockpit—one of them still half outside it, for these Hurricane cockpits are meant for one small pilot only—tried to ease their position without putting the aircraft into a fatal spin through some accidental kick or jolt on the controls.

Not a very pleasant task, hurtling along at five miles a minute about a mile above some tree-clad hills!

The passenger wriggled himself down till he could rest more or less on the pilot's knees. Round his shoulders, crammed painfully into one corner, Kershaw craned, looking where he was flying as well as he could under the circumstances.

He could not, of course, see all his instruments, but he handled them with mechanical accuracy by touch alone. So the machine flew on, rising over mountains, towards its base.

Suddenly, Frost yelled something.

The noise of the engine carried his words away, but at last a monosyllable—"Wop!"—was distinguishable. His

head jerked to port ; he dared not let go his precarious hold and point out what he meant.

Glittering in the sun, beautifully placed for an attack, a Fiat fighter was flying. It seemed to turn slightly towards them, and then resumed its course. In a few minutes, it was out of sight.

The Hurricane could certainly not have managed an engagement. Perhaps the Italian mistook it for a friend, or perhaps he had no ammunition.

Kershaw arrived over the mountain airfield where his squadron was based, circled, obtained permission to land, and came down.

On the ground the fire-squad stood ready, for it is not child's play to land a three-ton aircraft on a bombed aerodrome at a mile a minute, when you cannot see the thirty-odd dials and switches and lights that control it, and when you have to look where you are going round the edge of a man larger than yourself who is squashed on your knees and whose limbs are everywhere that the control column should go.

But the passenger helped, and the Hurricane made a perfect three-point, and ran smoothly to a standstill in its own place on the none-too-smooth and none-too-big advanced airfield that had been roughly smoothed out of the great hillside.

Frost and Kershaw got out and tried to uncrease themselves. Frost said what a man could in thanks. Kershaw grinned deprecatingly.

" She flew home pretty well with two up," he said.  
" Marvellous what these Hurrybirds'll do ! "

He had added his name to a list that we ought never to forget.

## FOURTEEN MILES THROUGH THE MINEFIELDS

SIX German sailors sat on a small raft, devoutly wishing that the inspiration and intuition of the Fuehrer had been so guided that living-room had been sought in some other direction than across the English Channel. For, at times, the English Channel can be rude and rough to a sausage-fed stomach.

They were a long way out, many miles from shore, and the evening was descending, icy cold and lowering. There had been showers during the day, and the men shivered as they clung, wet through and miserable, on the little tossing raft.

A British fighter returning from intruder duties over France flew overhead, came round, dived just over them, and flew away.

Over in England, telephones began to ring. A Fighter Station rang Group Headquarters, which rang Area Combined Headquarters, which rang Group Controller, who rang the Air-Sea Rescue people.

Those moustached angels summoned three Sergeants to Station Headquarters, where they were briefed on the strength of the scanty information then available, and told to get cracking.

"The weather is breaking up," they were informed. "This raft won't be likely to live through the night. And the men on her look pretty well done up; they've been voyaging around quite a while, apparently. Better drop a Thornaby Bag—or, if you can, go down and pick them up. But it will probably be too rough for the slightest chance of that. Do what you can. . . . By the way, they're Germans."

Sergeant T. Fletcher, D.F.M., of Atherton, Manchester, Flight-Sergeant Glew and Flight-Sergeant Healey walked down to their machine.

It was a  $3\frac{1}{2}$ -ton Walrus amphibian, a single-motor biplane with a 46 feet wingspan, not at all the sort of craft to go fishing for Germans in on a night when a big gale was rising and was already whining along over the tops of sizeable breakers.

They took off, and set a course towards the spot where the raft had been last seen. It is, of course, not an easy job to find a raft in the dusk on a rising sea. A raft, from flying height, looks about as big as a postage-stamp ; and if the mariners ever had any fluorescine or smoke canisters or other aids to detection, they had used them up long ago, and were now lying sodden and dark on the dark raft.

The sun was setting when the Walrus began her search, and it had got pretty far down on to the horizon when, at last, Glew said, "There they are ! "

Fletcher, who was flying the Walrus, had a look round the horizon. They were about fourteen miles out, and the wave-crests showed clearly that a touch-down could be made only at the most extreme risk. Away to the west, above the sun, there were tremendous banks of purplish clouds, driven by a rising wind.

Below, the raft slithered up the side of one trough of water and down into the darkness of another ; the men seemed hopeless and motionless. It was clear that there would be no survivors if they had to ride through the gale that would burst with the gathering night.

There were six men on the raft. They were Germans ; but they were in that state in which nationality is forgotten and humanity remembered.

The Walrus went round in a circle.

"If we go down, we shan't be able to take off again, lads," Fletcher said. "It will mean taxi-ing back. What about it?"

"Mines?" someone asked.

They all knew that British minefields lay between them and the coast. By day, it is pretty fatal to try to taxi an aeroplane through minefields; at night, you just push along quietly and take your chance.

"Better try it," Fletcher decided. "Those poor devils haven't a chance, otherwise."

With consummate skill he chose a huge, sliding wave-top on which to get the Walrus down. As they hit that moving mountain, waves smacked up beneath the wing-tips with the force of small volcanic eruptions; but they came to a slow drift presently, all in one piece still:

They were a hundred feet from the raft, and they could not find it for some minutes, till plane and raft lifted to a wave-top simultaneously. Then Fletcher brought the Walrus round and taxied skilfully up to the raft. As they reached it, Glew leaned out and passed a boathook to one of the men on the raft.

Some Germans have guts, and others are not built that way. This man, instead of making the boathook fast to the raft, grabbed it himself and jumped, and half clambered, and was half hauled into the rear hatch as the raft swept past and away.

Fletcher turned the machine in the deepening darkness and taxied carefully back again, his motor drenched with salt water as each big wave broke over the aircraft. It was not a pleasant operation.

A rope was thrown from the Walrus, but the Germans on the raft fumbled it, and the Walrus was lifted, at that very moment, by a tremendous cross-sea and flung bodily on to the side of the raft, seriously injuring one of the survivors and hurling two others into the water.

One of these men grabbed the trailing rope, and the other got hold of one of the aircraft's wing-floats. But the sea beat them off again with vindictive fury. Weakly crying, they were swept away into the darkness, and lost.

The Walrus was still grinding over the raft, to which three survivors were still clinging. Before she broke away, Healey leaned right out of the rear cockpit till only the grip of his legs held him in, and grabbed a German and managed somehow to haul him in through the hatch.

Once more Fletcher turned the machine, through seas that threatened every moment to overwhelm her. At that moment a big sea smashed the windscreen in front of him, and water began to pour into the aircraft from each wave-crest.

Still, he contrived to taxi back to the raft. The injured man who had been on it was no longer to be seen—perhaps the sea had swept him off. But one survivor still remained.

It was too dark now to see more than half a dozen yards ahead. It had to be this time or never, so Fletcher deliberately put the Walrus straight at the raft, while the others stood by. Just as the machine rode up over the raft, Glew reached out of the nose and hauled the last of the Germans into the aircraft.

"There's one of them!" Healey shouted, pointing into the gloom.

They taxied round for some time, and once they thought they heard a distant shouting. But they saw no more of the swimmers.

It was now completely dark, and the wind was whining over the rising sea. Water was still sousing in through the broken windscreen, and the rescued Germans were told to bale for their lives.

It is not very easy to find a course in such a sea, after you have spent an hour going round in circles trying to pick up men from the sea. But Fletcher had a pretty good idea of the direction he wanted to take, and set off boldly at full throttle in an attempt to taxi back to port. The state of the sea showed that any attempt to rise would simply be to court disaster.

As they went roaring along, skidding over the summits of the waves, smashing down into troughs, and ploughing up the sliding slope opposite, the possibility of picking up a British mine must have been clearly present in every Britisher's mind. As for the Fritzes, they just baled and baled and baled.

The Walrus rode on, mile after mile, and how she escaped the protruding glass horns, any one of which could have touched off 600 lbs. or so of high explosive, it is impossible to say.

Suddenly, Glew called sharply, "There's the coast!"

Less than thirty yards ahead of them a fugitive glimpse of moonlight had showed breakers thundering and spouting against rocks. In another minute, they would have been well and truly wrecked.

Fletcher took her round as sharply as he dared, and began to taxi parallel to the coast.

But coasts, of course, do not run in straight lines. Moreover, they have a nasty habit of throwing out bastions of undersea rocks every now and then.

Once, the Walrus taxied between two areas of pouring white foam, clearly showing big rocks just under the

waves. But it was her lucky night ; rocks and mines and all that stuff meant nothing to her.

Still, the journey, with eyes strained to watch the curves of that menacing coast in the blackness, was not a joyride. The Germans, particularly, did not appear to enjoy it.

And then, ahead of them, a signal light flickered.

Fletcher throttled back, and heaved a sigh of relief. A sturdy little trawler had come busying out to meet him. After an exchange of rude pleasantries, it turned about and guided him carefully into harbour.

The three Sergeants felt that they had earned a night's repose.

## AMBULANCE FLIGHT

THE work of the ambulance aircraft in this war has received little mention. To save a comrade, if necessary under fire, may win a fighting soldier the V.C. ; but, to the ambulance people, it is all in the day's work.

Among the troops themselves, certain ambulance aeroplanes have become almost legendary.

There is Fatima, an elderly De Havilland Rapide, famous for fetching wounded from impossible places in North Africa. Several times, she has taken off in dust-storms when all ordinary flying was stopped. But the call of the maimed and suffering is not to be denied, and delay may mean loss of life ; so Fatima plunges forward through the swirling clouds, with men trailing fire-hoses running after her . . . and always makes a successful getaway.

It is said of her that she once landed in a steep-sided wadi whose edges were only one foot beyond each wing-tip, and took off again with a full load.

An Airspeed ambulance in that theatre is flown by a man who used to do stunt flying for M.G.M. Films before the war. Then, it was his job to crash aircraft in mid-air, to nose-dive into the ground, to fly over speeding cars while passengers transferred from them into his plane.

He has suffered seventeen broken bones, and has twice very nearly been burned to death.

Now he seems to bear a charmed life. In ambulance flights he has performed some of the riskiest bits of flying, in dangerous emergencies, that have ever been lived through. His greatest joke is that, in it all, he has not had a single bruise or put his aircraft out of commission for a single day.

One of the greatest eye specialists in the world is a doctor aboard an ambulance aircraft in another theatre of war.

He has carried out almost incredibly difficult operations on men whose eyes have been damaged in battle. There must be, at a minimum, twenty or thirty men walking about with partial or full sight to-day who, but for his skill brought to them in the very smoke of the battlefield, would be in unrelieved darkness for the rest of their lives.

This man has operated actually under fire, in areas where confused tank battles have swirled and circled.

Against this background of unquestioning and unhesitating service, the story I want to tell unfolds itself. And it is the story of a failure.

An Airspeed ambulance in Northern Australia received a sudden and very urgent call. Men needed medical help who would surely die if it were delayed.

Unfortunately, a Queensland dust-storm was raging—one of those storms in which experienced sheepmen who wander a few yards from the wire get lost and die. But what of that? The ambulance aircraft's proud boast is that it never hesitates to answer a call, no matter what the weather.

The Airspeed crew consisted of a sergeant-pilot aged twenty, a corporal, and an aircraftman. The twenty-year-old was in charge, as he was the senior.

The machine bumped forward through the dusty darkness, and vanished. It was a question of flying by instruments, of course, because landmarks were obliterated; not that there are any "fixes" worth the name over the scrub-ridden desert of North Queensland, even in fine weather.

They flew on over country that became more and more desolate and unfamiliar. Presently, it was apparent to the pilot that he had lost his course. He did everything he could, but still that unbroken expanse of grass and scrub and desert glided by below.

Petrol got lower and lower. Presently, there was a stutter—and then silence. They came gliding down towards a savannah of shoulder-high, dense grass. The pilot "pancaked" as best he could, and a fatal crash was avoided; but even so, the machine turned over. Owing to the skill with which he had come in, none of the three were hurt beyond bruises and a shaking.

They had no idea where they were. They had only their emergency rations. Luckily, a river had been sighted as they descended, and they found it only a couple of hundred yards away.

Aircraft are still painfully short in Australia, compared with the work they have to do, and personnel have orders

not to abandon machines until hope of salvage has been exhausted. So this crew stood by for ten days, searching the sky for a rescuer.

Long before the ten days were up, they had exhausted their emergency rations. But they were not down-hearted ; they made some hooks out of slivers of metal from the aircraft, and devised a line from some ligatures, and caught fish. They were somewhat repulsive-looking fish, but they tasted all right.

Then they set about making a raft. It was obviously impossible to tramp far through that semi-tropical grass ; but everyone knows that a river ends in the sea, and on the coast there is always a chance of getting somewhere.

They improvised the raft from some saplings, and gave it buoyancy by lashing an empty petrol tin to each corner. It was, of course, somewhat insecure, but what of that ?

Then they needed a sail, and they made that from a parachute tied on to a pole. Then, after an appropriate launching ceremony in which a bottle of medicine was broken on the " bows " of the raft, they pushed off downstream, paddling with their hands, as the sail was not very effective.

They had to trail their legs in the river, which was infested with crocodiles. Well, if a crocodile came too near, they all yelled and splashed, and flung sticks and stones at it, and it hastily pushed off again.

This method of progress was, however, not very helpful to the fishing industry ; and, after all, an army marches on its stomach.

Nothing daunted, they searched round till they found oysters, periwinkles, and other remarkable shelled creatures,

prised them off rocks with a screwdriver, opened them with a stone, and ate them.

For ten days, they journeyed down the river, surviving various adventures with rapids, falls and rocks. Several times they were flung in among the crocodiles ; but only the crocodiles were frightened at that.

And then, as the three mariners were industriously paddling and sailing one morning, one of them realized that the river banks, which had been drawing more distant from them for some time, were out of sight altogether, and a powerful current was sweeping them out to sea.

They had not budgeted for this, but it was not possible to stop the trip. An ebb tide was running strongly ,and though they pulled down the sail and tried to paddle back, that was useless.

Moreover, a new trouble developed. One of them saw a ten-foot fish dart towards the raft, and turn over to show a curved mouth and a white belly.

“ ‘Ware sharks ! ” he yelled.

The splashing and shouting and whistling began with ten times increased vigour. The shark, nettled at this uncivil reception, glided past and ahead.

In the course of the day other sharks joined the party—many of them. Some were much bigger than the first caller, some smaller. Some were very bold, and made individual or concerted rushes at those temptingly dangling white legs. But they were offered all sorts of discouragement ; the mariners even tried to catch one on one of the parachute lines, with a bent screwdriver for a hook and a shirt as bait. The sharks nosed at the shirt, but evidently thought it without nourishment.

Attended by a school of sharks, the raft went out of sight of the shore and began a Pacific voyage.

It looked as if there was no future in it ; but towards evening, they drifted rapidly towards some islands. For an hour the three men (who were now, of course, without food) took bets whether the current would carry them past the outermost island, and if it was worth trying to swim for it.

Then the raft swept round in a great curve, and with a little paddling, they brought it on to a blinding white beach ; and the sharks found they had travelled about twenty miles without even a mouthful of toes for their trouble.

As the mariners thankfully stepped ashore, they got a new shock. Several black faces were regarding them intently from behind some bushes ; and as one of the natives shouted something to another, they saw that his teeth were filed, which is a practice among cannibal tribes in that area.

However, it was no use objecting to a little thing like that ; so the travellers walked boldly up the strand, and if they could not for the moment have a banana, they at least threw into their air as much as possible of the conquering hero come to receive tribute as was feasible to men in their rags and beards.

The natives were taken aback, hesitated, and then one or two ran out and prostrated themselves and began to jabber.

" That's all right, pals ! " the sergeant-pilot said condescendingly. " But we're hungry. Food. Grub. Eatee. "

He made the appropriate signs.

At first, the cannibals seemed to be very alarmed. It appears they had some vague impression that one of them

ought to be cooked for the white strangers' satisfaction ; the only trouble was, which ?

But presently some charming girls in leaves and coral, carrying cooking-pots, came tittering out from behind the bushes ; and one of them, who looked about eighty-five, and evidently had had sons of her own, took in the situation, and led the travellers away to a hut village.

There they were given yams and fish and wild honey and turtle eggs, and some mixtures about which it is probably well not to enquire. The natives got quite interested to see how much they *could* eat ; the old lady, in particular, took a delight in showing off her finds, and some younger ones became slightly embarrassing in the ardour of their attentions.

"I didn't want to spoil you fellows' appetites," the sergeant-pilot said when they had all finished eating. "But, of course, they *may* be fattening us up."

But they weren't. Evidently there are good cannibals and bad cannibals, and these were the former. After a good deal more sign-language, in which the old lady acted as a mother to them, the castaways indicated their urgent desire to get back to Australia, home and glory. They were put in big log boats, manned by native oarsmen, and run about ninety miles back to a distant point on the mainland, the centre of a native fleet that sang so dreadfully that the travellers want to hear nothing but chamber music for the rest of their lives.

The armada cast anchor at a Mission Station, where an elderly missionary received the airmen with the greatest hospitality. He had not seen any white men for over a year, and pressed them to stay as long as they wished.

But they were anxious to get back to Tojo-strafing, and an R.A.A.F. aeroplane came over to pick them up within a few days.

When they got back to their base, all three felt pretty miserable. They had achieved the impossible ; but they had failed in their ambulance mission, even though through no fault of their own.

"Oh, that's all right!" they were reassured. "We sent off a second string half an hour after you left. It did the job all right."

The aerial ambulance service is like that !

### SCARECROW PATROL

THERE has been a lot of talk lately about the U-boat menace. It is a danger, all right, and fine seamen's lives and vital cargoes are being lost every day because of it. But the time when it might have lost Britain the war has passed. It can delay Hitler's doom now, but not avert it.

There was a period of some months when U-boats went near to defeating us. Not until after it is all over shall we be told just how near ; but the escape was too close to be pleasant.

We had had serious aircraft losses, and we were obliged to divert what machines were left to certain vital theatres of war. This coincided with a sudden increase in the number of U-boat "wolf packs" operating near our coasts, and with the disruption of transport and dock facilities.

For a while, the import position looked very grave.

It was then that certain R.A.F. officers made what seemed to be a mad suggestion. Desperate situations call for desperate remedies; the idea was passed from place to place till someone with authority thought it worth while to take the risk.

And then, out of their sheds, men wheeled a number of Tiger and Hornet Moths, to attempt the biggest bluff of the war.

These little peace-time flivvers have an endurance limit of about two and a half hours, and a petrol capacity of fourteen gallons. They are single-motor machines, meant for touring on a calm Saturday afternoon from the Club.

But it was suggested to hand over a large area of sea, infested with U-boats, to them to patrol.

They do not, of course, carry machine-guns or cannon, and would probably disintegrate or collapse under the recoil of such brutal weapons! Nor can they carry bombs.

A modern submarine, on the other hand, may carry anything up to an 8-inch gun, anti-aircraft and heavy machine-guns, and may run up to 3,000 tons and carry a crew of up to 150 men. This is no quarry for an unarmed tourist two-seater to "attack."

None the less, that was the proposal.

The only difficulty was to sort out from the clamouring volunteers, without starting a series of mutinies, the number of pilots required to do the job.

However, the R.A.F. can do almost anything, and presently what soon became known as the "Scarecrow Patrol" was in full swing.

The idea was simple—so long as it worked.

It was just this, that the Moth should patrol fairly high, and whenever it saw a U-boat or a suspicious trail of foam or bubbles, it should dive down as if to make an attack. Everything depended on the bluff being successful ; it was absolutely necessary to make each U-boat crash-dive, because the first one that realized that it was being chivvied by an unarmed flivver would certainly open fire, probably blow its tormentor to bits, and certainly send the news back to Germany that that stretch of the seaboard of England was totally undefended by patrol aircraft.

A big risk. But it had to be taken.

It is said that some of the pilots armed themselves with revolvers, and others smuggled aboard the little smoke-bombs used for some kinds of target practice, and flung those over with their hands as if they were cricket balls.

What is certain is that the bluff worked—and went on working.

The Moth pilots got so cocksure that they used to dive to within a few feet of the sea. Several U-boats crash-dived so fast that men were swept off their decks into the sea, and it is highly probable that damage was done to the delicate constitution of the submarines by the terrific stresses involved in these dives.

Now and again, the Moths were able to call up British naval units, which salted the area with depth-charges until the skulking U-boats must have been shaken almost—or perhaps quite—to death. Down there in the green depths, plates must have buckled and men been hurled prostrate and bleeding as those charges exploded.

The confidence with which the Moths made their attacks led to an amusing sequel. *Der Adler*, the official

Luftwaffe magazine, published drawings and estimated data concerning a new British naval dive-bomber which had come into service for U-boat attack.

The quoted speed was about three times the Moths' limit, the estimated wing-span was nearly double, length the same, and the armament would have been respectable for something in the Beaufighter class—but there was not the slightest doubt, from the facts given, that this new dive-bomber was simply a symposium of ideas from agitated U-boat skippers who had been "pranged" by Hornet and Tiger Moths!

This horrific cataloguing doubtless made other German captains all the more eager not to wait upon the order of their going when the young men of the Scarecrow Patrol appeared on the distant horizons.

It was never the Germans that worried them. It was the weather!

It grew steadily worse and worse. Weather can often trouble a fifteen-ton flying-boat a whole lot; what it must have been like to prowl around the wave-tops in these "toy aeroplanes" with their single motors, and with always the chance of getting off course and finding that the juice wouldn't last for a landfall, it needs experience to tell.

In one Winter month, 698 flying hours were pegged up by the Scarecrow Patrol.

"By keeping the U-boats so amazingly away from our shipping, they undoubtedly saved thousands of tons, and hundreds of lives," Wing-Commander G. G. Barrett said later, telling the story to the Royal United Services Institution.

There was only one complaint.

When the "regulars" got back on the job, they voiced it good and loud.

"You so-and-so's have been so damned officious to our U-boats," they complained, "that now we have to spend all day all the week without a chance in a million of getting near enough to prang them. They can see us—we're not midges!—and the swine just crash-dive as soon as a seagull comes over the horizon now!"

Well—leave it at that.

But do not forget the young men of the Scarecrow Patrol, who risked their lives daily that sailors' lives might be a little more secure; and do not forget Stephens of New Guinea, or Bill Bradford of Bataan, or Clouston or Hayes or Sharp, or any of these others whose tales I have—alas! inadequately—told.

When the tumult and the shouting dies, and the Hitlers and the Goerings depart, and Mussolini gets out his organ, think, sometimes, of the named and nameless men in this war who never hesitated to offer their lives to help others, who asked no fame and sought no medals, flying not to kill but to save.

These are men who "left the vivid air signed with their honour."

We will remember them!